CLAIMS

What is claimed is:

Claim 1. A method for modifying N-methyl-D-aspartate receptor (NMDAR) interaction with non-receptor tyrosine kinase Src in cells comprising the steps of:

(a) providing a composition including at least one Src-unique domain anchoring protein inhibitor (SUDAPI); and

(b) administering the composition of step (a) to said cells in an amount effective to achieve modification of said NMDAR interaction with said non-receptor tyrosine kinase Src in said cells wherein said modification ameliorates a disease or condition related to NMDAR signaling.

Claim 2. The method as in claim 1 wherein said composition of step (a) additionally includes a carrier effective to transport said SUDAPI into said cells.

Claim 3. The method as in claim 2 wherein said carrier is selected from the group consisting of HIV Tat domain peptides, arginine-rich peptides, antennapedia peptides, VP22 herpes simplex viral peptides and lipids.

Claim 4. The method as in any one of claims 1-3 wherein

said cells are cells of a central nervous system (CNS).

Claim 5. The method as in any one of claims 1-3 wherein said cells are cells of a peripheral nervous system.

Claim 6. A pharmaceutical composition for modifying N-methyl-D-aspartate receptor (NMDAR)interaction with non-receptor tyrosine kinase Src in cells comprising at least one SUDAPI combined with a pharmaceutically acceptable solution or carrier.

Claim 7. The pharmaceutical composition as in claim 5 wherein said carrier is effective to transport said SUDAPI into said cells.

Claim 8. The pharmaceutical composition as in claim 7 wherein said carrier is selected from the group consisting of HIV Tat domain peptides, arginine-rich peptides, antennapedia peptides, VP22 herpes simplex viral peptides and lipids.

Claim 9. The pharmaceutical composition as in claim 6 wherein said cells are cells of a central nervous system (CNS).

Claim 10. The pharmaceutical composition as in claim 6

wherein said cells are of a peripheral nervous system.

Claim 11. The method as in claim 1 wherein said SUDAPI is SUDAPI-1 (SEQ ID NO:1).

Claim 12. The pharmaceutical composition as in claim 6 wherein said SUDAPI is SUDAPI-1 (SEQ ID NO:1).

Claim 13. A method for modifying N-methyl-D-aspartate receptor (NMDAR)interaction with non-receptor tyrosine kinase Src in cells comprising the steps of:

(a) providing a composition including TSUDAPI-1 (SEQ ID NO:2) and

(b) administering the composition of step (a)to said cells in an amount effective to achieve modification of said NMDAR interaction with non-receptor tyrosine kinase Src in said cells wherein said modification ameliorates a disease or condition related to NMDAR signaling.

Claim 14. The method as in claim 13 wherein said cells are cells of a central nervous system (CNS).

Claim 15. The method as in claim 13 wherein said cells are cells of a peripheral nervous system (PNS).

Claim 16. A pharmaceutical composition for modifying N-methyl-D-aspartate receptor (NMDAR) interaction with non-receptor tyrosine kinase Src in cells comprising TSUDAPI-1 (SEQ ID NO:2) combined with a pharmaceutically acceptable solution.

Claim 17. The pharmaceutical composition as in claim 16 wherein said cells are cells of a central nervous system (CNS).

Claim 18. The pharmaceutical composition as in claim 16 wherein said cells are cells of a peripheral nervous system (PNS).

Claim 19. An isolated peptide comprising ND2.1 (SEQ ID NO:7) wherein said peptide exhibits interaction with a Src unique domain.

Claim 20. The isolated peptide as in claim 19 wherein said interaction is anchoring Src to a NMDAR complex.

Claim 21. The isolated peptide as in claim 20 wherein said anchoring permits upregulation of NMDAR activity through Src.

Claim 22. A method for inhibiting non-receptor tyrosine kinase Src in cells expressing non-receptor tyrosine kinase Src comprising the steps of:

(a)providing a composition including at least one SUDAPI; and

(b) administering the composition of step (a) to said cells in an amount effective to achieve inhibition of said non-receptor tyrosine kinase Src in said cells.

Claim 23. The method as in claim 22 wherein said composition of step (a) additionally includes a carrier effective to transport said SUDAPI into said cells.

Claim 24. The method as in claim 23 wherein said carrier is selected from the group consisting of HIV Tat domain peptides, arginine-rich peptides, antennapedia peptides, VP22 herpes simplex viral peptides and lipids.

Claim 25. The method as in any one of claims 22-24 wherein said cells are from a tissue selected from the group consisting of peripheral nervous system tissue, central nervous system tissue, heart, intestine, kidney, liver, lung, pancreas, skeletal muscle, spleen, testis, bone, skin and brain.

Claim 26. A pharmaceutical composition for inhibiting non-receptor tyrosine kinase Src in cells expressing non-receptor tyrosine kinase Src comprising at least one SUDAPI combined with a pharmacological acceptable solution or carrier.

Claim 27. The pharmaceutical composition as in claim 26 wherein said carrier is effective to transport said SUDPAI into said cells.

Claim 28. The pharmaceutical composition as in claim 27 wherein said carrier is selected from the group consisting of HIV tat domain peptides, arginine-rich peptides, antennapedia peptides, VP22 herpes simplex viral peptides and lipids.

Claim 29. The pharmaceutical composition as in any one of claims 26-28 wherein said cells are from a tissue selected from the group consisting of peripheral nervous system tissue, central nervous system tissue, heart, intestine, kidney, liver, lung, pancreas, skeletal muscle, spleen, testis, bone, skin and brain.

Claim 30. The method as in claim 22 wherein said SUDAPI is SUDAPI-1(SEQ ID NO:1) or TSUDAPI(SEQ ID NO:2).

Claim 31. The pharmaceutical composition as in claim 26 wherein said SUDAPI is SUDAPI-1(SEQ ID NO:1) or TSUDAPI(SEQ ID NO:2).

Claim 32. The pharmaceutical composition as in claim 7 wherein said cells are cells of a central nervous system (CNS).

Claim 33. The pharmaceutical composition as in claim 8 wherein said cells are cells of a central nervous system (CNS).

Claim 34. The pharmaceutical composition as in claim 7 wherein said cells are of a peripheral nervous system.

Claim 35. The pharmaceutical composition as in claim 8 wherein said cells are of a peripheral nervous system.

Claim 36. The method as in claim 2 wherein said SUDAPI is SUDAPI-1 (SEQ ID NO:1).

Claim 37. The method as in claim 3 wherein said SUDAPI is SUDAPI-1 (SEQ ID NO:1).

Claim 38. The method as in claim 4 wherein said SUDAPI is SUDAPI-1 (SEQ ID NO:1).

Claim 39. The method as in claim 5 wherein said SUDAPI is SUDAPI-1 (SEQ ID NO:1).

Claim 40. The pharmaceutical composition as in claim 7 wherein said SUDAPI is SUDAPI-1 (SEQ ID NO:1).

Claim 41. The pharmaceutical composition as in claim 8 wherein said SUDAPI is SUDAPI-1 (SEQ ID NO:1).

Claim 42. The pharmaceutical composition as in claim 9 wherein said SUDAPI is SUDAPI-1 (SEQ ID NO:1).

Claim 43. The pharmaceutical composition as in claim 10 wherein said SUDAPI is SUDAPI-1 (SEQ ID NO:1).

Claim 44. The method as in claim 23 wherein said SUDAPI is SUDAPI-1(SEQ ID NO:1) or TSUDAPI(SEQ ID NO:2).

Claim 45. The method as in claim 24 wherein said SUDAPI is SUDAPI-1(SEQ ID NO:1) or TSUDAPI(SEQ ID NO:2).

Claim 46. The method as in claim 25 wherein said SUDAPI

is SUDAPI-1(SEQ ID NO:1) or TSUDAPI(SEQ ID NO:2).

Claim 47. The pharmaceutical composition as in claim 27 wherein said SUDAPI is SUDAPI-1(SEQ ID NO:1) or TSUDAPI(SEQ ID NO:2).

Claim 48. The pharmaceutical composition as in claim 28 wherein said SUDAPI is SUDAPI-1(SEQ ID NO:1) or TSUDAPI(SEQ ID NO:2).

Claim 49. The pharmaceutical composition as in claim 29 wherein said SUDAPI is SUDAPI-1(SEQ ID NO:1) or TSUDAPI(SEQ ID NO:2).